UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to:
OSB1999-0091

June 24, 1999

J. Eric Glover
Area Manager
Bureau of Reclamation
Pacific Northwest Region
Lower Columbia Area Office
825 NE Multnomah Street, Suite 1110
Portland, Oregon 97232-2135

Re: Endangered Species Act Section 7 Biological Opinion on the Biological Research Study at the Spring Hill Pumping Plant

Dear Mr. Glover:

This letter represents the National Marine Fisheries Service's (NMFS) Biological Opinion pursuant to section 7 of the Endangered Species Act (ESA) on the Biological Research Study at the Spring Hill Pumping Plant.

Background

The Bureau of Reclamation (BOR) has recently initiated its Tualatin Basin Fish Passage Improvement Program to upgrade fish screens and ladders at the Spring Hill pumping plant located on the Tualatin River near Forest Grove, Oregon. The program will ensure that new screens will meet NMFS and state criteria for safe passage of juvenile and adult anadromous fish. As part of the program, BOR is initiating a biological research study at the Spring Hill pumping plant to generate baseline data on the distribution and behavior of anadromous fish and predator-prey interactions in the project area. BOR is providing funds to the Oregon Department of Fish and Wildlife (ODFW) Columbia Region Research Program to conduct the sampling study. In anticipation of the final listing of Upper Willamette River (UWR) steelhead taking effect on May 24, 1999, BOR initiated formal consultation via an April 1, 1999, letter from J. Eric Glover to Rick Applegate, NMFS. A February 5, 1999, letter from David L. Ward, ODFW, to Michelle Day, NMFS, provides additional information on the study.

The objective of this biological opinion is to determine whether the Spring Hill Pumping Plant Biological Research Study is likely to jeopardize the continued existence of the Upper Willamette steelhead ESU or result in the destruction or adverse modification of its proposed critical habitat.

Proposed Action

The research program consists of two primary components: (1) releasing and monitoring the movements of up to 100 radio tagged juvenile hatchery steelhead as they migrate down the Tualatin River past the Spring Hill pumping plant, and (2) boat electrofishing to determine the abundance of predatory fish in the plant's intake canal, and to estimate the consumption of juvenile salmonids by the predatory fish. Radio tagged fish will be released upstream of the facility in 4 groups of 20 to 30 fish from early April through early June. Stationary receiver/antennas will be located to monitor fish upstream from the canal entrance, in the canal, and downstream the canal entrance. All fish released are hatchery fish from Bonneville hatchery.

The electrofishing will be limited to the intake canal. The intake canal will be blocked, and an electrofishing boat will be used to conduct a three-pass removal program. Electrofishing will occur once every two weeks from April 5 through June 26 (six sampling periods), and once monthly in July and August (two sampling periods). Each sampling period includes 3 passes; each pass will take approximately one of ODFW's standard 15-minute electrofishing runs. Effort each period will be three, 15-minute runs, for a total effort of 24 electrofishing runs (eight periods). ODFW will adhere to the applicable NMFS "Backpack Electrofishing Guidelines" which are: 1) the crew leader shall far surpass the minimal experience, and crew will also be experienced, 2) pulsed direct current with appropriate voltage and pulse width will be used, 3) the boat will move continuously and systematically while the power is on, 4) fish collected will be placed in tanks with adequate water and oxygen, and 5) the open end of the canal will be blocked by a net. Northern pikeminnows captured are killed in order to obtain stomached contents. Largemouth bass that are captured receive pumping of digestive tracts and are then released. All juvenile salmonids captured will be released.

Biological Information and Critical Habitat

UWR steelhead (*Oncorhynchus mykiss*) were listed as threatened under the ESA on March 25, 1999 (64 FR 14517). Critical habitat was proposed for the Upper Willamette River steelhead on February 5, 1999 (64 FR 5740). UWR steelhead critical habitat is designated to include all river reaches accessible to listed steelhead in the Willamette River and its tributaries above Willamette Falls. Also included are the river reaches and estuarine areas in the Columbia River from the mouth upstream to, and including, the Willamette River. With regard to adjacent riparian zones, NMFS defines steelhead critical habitat based on key riparian functions. Specifically, the adjacent riparian area is defined as the area adjacent to a stream that provides the following functions: shade; sediment, nutrient or chemical regulation; streambank stability; and input of large woody debris or organic matter. The physical and biological features that create properly functioning salmonid habitat vary throughout the range of steelhead and the extent of the adjacent riparian zone may change accordingly, depending on the landscape under consideration.

Biological, life history, and population trends information for UWR steelhead can be found in Busby et al. 1996, NMFS 1999, and ODFW and WDFW 1998. Following is a very general life history of UWR steelhead. The UWR steelhead are late-migrating winter steelhead, entering fresh water primarily in March and April. They typically spawn in April, May, and June. Depending on water temperature, steelhead eggs may incubate for 1.5 to 4 months before hatching. Juveniles generally spend 2 years in freshwater before migrating to the ocean where they generally spend 2 more years prior to returning to spawn.

Evaluating Proposed Actions

The standards for determining jeopardy are set forth in Section 7(a)(2) of the ESA as defined by 50 C.F.R. Part 402 (the consultation regulations). NMFS must determine whether the action is likely to jeopardize the listed species and/or whether the action is likely to destroy or adversely modify critical habitat. This analysis involves the initial steps of (1) defining the biological requirements of the listed species, and (2) evaluating the relevance of the environmental baseline to the species' current status.

Subsequently, NMFS evaluates whether the action is likely to jeopardize the listed species by determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NMFS must consider the estimated level of mortality attributable to: (1) collective effects of the proposed or continuing action, (2) the environmental baseline, and (3) any cumulative effects. This evaluation must take into account measures for survival and recovery specific to the listed salmon's life stages that occur beyond the action area. If NMFS finds that the action is likely to jeopardize, NMFS must identify reasonable and prudent alternatives for the action.

Furthermore, NMFS evaluates whether the action, directly or indirectly, is likely to destroy or adversely modify the listed species' critical habitat. The NMFS must determine whether habitat modifications appreciably diminish the value of critical habitat for both survival and recovery of the listed species. The NMFS identifies those effects of the action that impair the function of any essential element of critical habitat. The NMFS then considers whether such impairment appreciably diminishes the habitat's value for the species' survival and recovery. If NMFS concludes that the action will adversely modify critical habitat it must identify any reasonable and prudent measures available.

For the proposed action, NMFS's jeopardy analysis considers direct or indirect mortality of fish attributable to the action. NMFS's critical habitat analysis considers the extent to which the proposed action impairs the function of essential elements necessary for adult and juvenile migration and juvenile rearing of the listed salmon under the existing environmental baseline.

Biological Requirements

The first step in the method NMFS uses for applying the ESA standards of § 7 (a)(2) to listed salmon is to define the species' biological requirements that are most relevant to each consultation. NMFS also considers the current status of the listed species taking into account population size, trends, distribution, and genetic diversity. To assess the current status of the listed species NMFS starts with the determination made in its determinations to list the particular species for ESA protection and also considers new data available that is relevant to those determinations.

The relevant biological requirements are those necessary for the listed species to survive and recover to naturally reproducing population levels at which protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stocks, enhance their capacity to adapt to various environmental conditions, and allow them to become self-sustaining in the natural environment.

For this consultation, the biological requirements, which could be impacted by the proposed action, are rearing (juvenile) and migration (juvenile and adult) survival.

Environmental Baseline

The biological requirements of the listed species are not currently being met under the environmental baseline. Their status is such that there must be significant improvement in the environmental conditions they experience including the condition of any designated critical habitat (over those currently available under the environmental baseline). Any further degradation of these conditions would have a significant impact due to the amount of risk the listed salmon presently face under the environmental baseline.

Analysis of Effects

Effects of Proposed Action

Effects to the listed species could occur from the release of hatchery fish and from the electrofishing. Effects from the tagged hatchery fish are expected to be negligible as they will die due to the tags placed in their stomach. Their foraging should be almost absent. The electrofishing is not expected to affect adult steelhead since it will be limited in time and location. There will be a total of 24 15-minute electrofishing runs between April and August. Steelhead adults are not anticipated to be in the canal off the mainstem Tualatin since they will be seeking suitable spawning areas which consist of habitat unlike that found in the canal (e.g. swift currents and gravel substrate). Listed steelhead juveniles may be present in the canal. The limited duration of sampling and the guidelines of implementation will minimize injury to juveniles if they are encountered.

Critical Habitat

The proposed actions will not affect proposed critical habitat.

Cumulative Effects

Cumulative effects are defined in 50 CFR 402.02 as "those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." For the purposes of this analysis, the action area encompasses the immediate area around the Springhill pumping plant which includes the plant's intake canal. Future Federal actions, including the ongoing operation of hydropower systems, hatcheries, fisheries, and land management activities will be reviewed through separate section 7 consultation processes. Currently, there are no non-Federal actions that require authorization under section 10 of the ESA since there has not been publication of Section 9 prohibitions for the subject listed species. Therefore, these actions are not considered cumulative to the proposed action.

Conclusion

NMFS has determined that, based on the available information, the biological research study at the Spring Hill Pumping Plant is not likely to jeopardize the continued existence of Upper Willamette River steelhead or result in the destruction or adverse modification of proposed critical habitat. This conclusion has been reached based on the location (in the canal off the mainstem where it will avoid adults) and design (limited duration and use of guidelines will minimize injury to juveniles) of the study.

Incidental Take Statement

Sections 4 (d) and 9 of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patters such as breeding, feeding, and sheltering. Harass is defined as actions that create the likelihood of injuring listed species to such an extent as to significantly alter normal behavior

patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The measures described below are non-discretionary; they must be implemented by the action agency so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, in order for the exemption in section 7(o)(2) to apply. The Bureau of Reclamation has a continuing duty to regulate the activity covered in this incidental take statement. If the Bureau of Reclamation (1) fails to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, and/or (2) fails to retain the oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

An incidental take statement specifies the impact of any incidental taking of endangered or threatened species. It also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

Amount or Extent of the Take

We anticipate that the level of incidental take will be minimal. The best scientific and commercial data available are not sufficient to enable NMFS to estimate a specific amount of incidental take to the species itself. In instances such as these, the NMFS designates the expected level of take as “unquantifiable.”

Reasonable and Prudent Measures

NMFS believes that the incidental take of UWR steelhead that could occur as a result of the actions included in this Biological Opinion has been adequately minimized by study design. Therefore reasonable and prudent measures to further

reduce this incidental take are not necessary. However, the action agency shall monitor (as stipulated below in the Terms and Conditions section) the wild juvenile steelhead that are encountered to exemplify compliance with the incidental take that is allowed.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the ESA, the Bureau of Reclamation must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

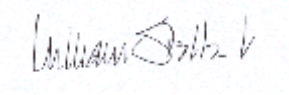
The Bureau of Reclamation shall require the Oregon Department of Fish and Wildlife to document of the number of wild juvenile steelhead that are captured during electrofishing as well as their condition and provide to NMFS at the completion of the evaluation (the end of August 1999).

Reinitiation of Consultation

Reinitiation of consultation is required if: (1) the amount or extent of taking specified in the incidental take statement, above, is exceeded, (2) the action is modified in a way that causes an effect on the listed species that was not previously considered in the BA and this biological opinion; (3) new information or project monitoring reveals effects of the action that may affect listed species in a way not previously considered; or (4) a new species is listed or critical habitat is designated that may be affected by the action (50 CFR § 402.16).

If you have any questions, please contact Michelle Day of my staff at (503) 231-6938.

Sincerely,



William Stelle, Jr.
Regional Administrator

cc: Chuck Korson, BOR
Dave Ward, ODFW

References

Busby, P.J., T.C. Wainwright, G.J. Bryant, L.J. Lierheimer, R.S. Waples, F.W. Waknitz, and I.V. Lagomarsino. 1996. Status review of west coast steelhead from Washington, Idaho, Oregon, and California. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-NWFSC-27, 261 pp.

National Marine Fisheries Service (NMFS). 1999. January 12, 1999, Memorandum for William Stelle and William Hogarth from Michael H. Schiewe through Usha Varanasi. BRT conclusions regarding the updated status of steelhead (*Oncorhynchus mykiss*) of the Upper Willamette River and Middle Columbia River ESUs. 44 pp.

ODFW and WDFW. 1998. Status Report Columbia River Fish Runs and Fisheries, 1938 - 1997. 299 pp.